S.B. Roll No……..

OPTICAL FIBER COMMUNICATION

6th Exam/6186/8161/6923/ ECE/EMP/ETV/ECE(II)/May,2015

Duration 3 Hrs. **Max Marks:75**

SECTION- A

Q.1. Fill in the blank spaces. 15 X 1=15

i. The number of bits transmitted per second over a channel is called _____.
ii. The optical communication frequency is _____.
iii. The principle of light propagation in optical fibre is based on _____.
iv. LASER stands for _____.
v. Dark current is defined as_____.
vi. LASER exhibits _____ emission.
vii. In a graded index fiber the refractive index _____.
viii. The optical fiber structure consists of basically three parts _____.
ix. Single mode fibers support only _____ mode of propagation.
x. The unit of Dispersion is _____.
xi. VCSEL stands for _____.
xii. Johnson noise is due to _____.
xiii. A photodiode is used in _____ bias.
xiv. DWDM stands for _____.
xv. The heart of an optical receiver is the _____.

SECTION-B

Q2. Attempt any five questions 5 X 6 = 30

i. Define: Critical Angle, Snell's Law
ii. What are Step Index and graded index fibres.
iii. Discuss the characteristics of light used in Optical Communication.
iv. Draw the block diagram of an Optical Receiver Circuit.
v. Describe the different types of functional Amplifiers.
vi. What is Splicing? Explain any two techniques of splicing.
vii. List a few applications of Optical Communication.

SECTION-C

Attempt any three questions. 3 X 10 = 30

Q3. What are the advantages and disadvantages of Optical Fiber Communication.
Q4. List the various types of LED's. Discuss the various types of LED structures.
Q5. Describe Optical Power Budgeting.
Q6. What is the need of an Optical Amplifier? Discuss SOA.
Q7 Explain the different types of losses in Optical Fibre Communication.
Q8. Write short notes on (any two)
a. Effect of dispersion on data Rate
b. WDM
c. Historical perspective of Optical Communication